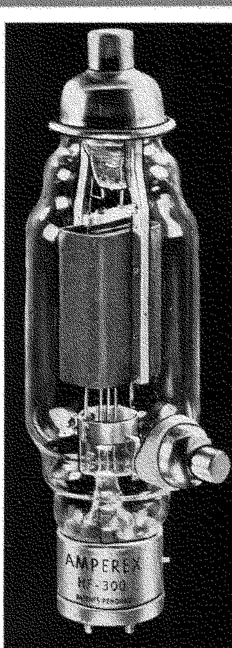


R.F. Power Amplifier, Oscillator, Class B Modulator

The HF-300 has found favor with many broadcasters and transmitter designers as a substitute for the 204A. A study of the operational data will disclose its superiority, in many classes of service, to the latter tube. It also, like the HF-100 and HF-200, is an efficient ultra-high frequency generator and possesses the characteristic common to Amperex designed tubes, of a high ratio of transconductance to interelectrode capacitance.

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

Audio Frequency Power Amplifier or Modulator—Class B

	Maximum Rating per Tube	Typical Operation Two Tubes		
A.C. Filament Voltage	..	11	11	11
D.C. Plate Voltage	3000	2000	2500	3000
D.C. Grid Voltage	..	—72	—95	—115
Load Resistance (per Tube) (ohms)	..	2400	3400	5000
Effective Load Resistance (Plate to Plate) (ohms)	..	9600	13600	20000
Zero Signal Plate Current (ma.)	..	60	60	60
Peak A.F. Grid to Grid Voltage	..	404	430	450
Max. Signal Plate Current (ma.)	275	480	430	360
Max. Signal Plate Input (watts)	600	..	..	..
Plate Dissipation (watts)	200	..	..	..
Max. Signal Driving Power (Approx.) (watts)	..	14	13	13
Max. Signal Plate Power Output (watts)	..	650	740	780

R.F. Power Amplifier—Class B—Telephony

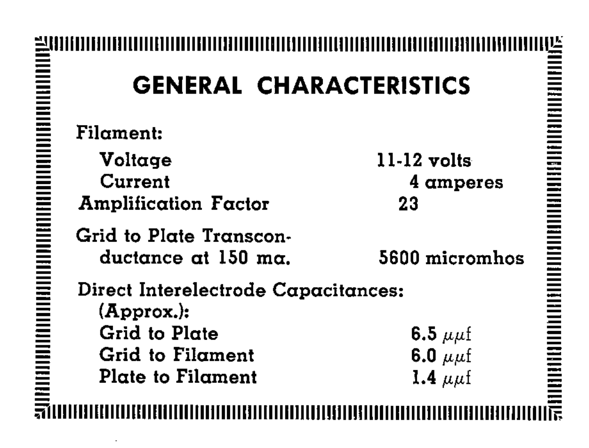
(Carrier conditions for use with modulation factor of 1.0)

	Maximum Rating per Tube	Typical Operation One Tube		
A.C. Filament Voltage	..	11	11	11
D.C. Plate Voltage	2500	1500	2000	2500
D.C. Grid Voltage	..	—60	—80	—100
Peak R.F. Grid Voltage	..	130	125	120
D.C. Plate Current (ma.)	200	185	150	120
Plate Input (watts)	320	278	300	300
D.C. Grid Current (Approx.) (ma.)	..	5	2	0.5
R.F. Grid Current (amps)	10	..	..	..
Plate Dissipation (watts)	200	186	195	195
Driving Power (at Modulation Peak) (watts)	..	17	10	6
Plate Power Output (watts)	..	92	105	105
F.C.C. Broadcast Rating (watts) (Nearest Classification for Final Stage Use)	75	..	..	..

Plate Modulated R.F. Power Amplifier Class C—Telephony

(Carrier conditions for use with modulation factor of 1.0)

	Maximum Rating per Tube	Typical Operation One Tube	
A.C. Filament Voltage	..	11.5	11.5
D.C. Plate Voltage	2200	1500	2000



GENERAL CHARACTERISTICS

Filament:	
Voltage	11-12 volts
Current	4 amperes
Amplification Factor	23
Grid to Plate Transconductance at 150 ma.	5600 micromhos
Direct Interelectrode Capacitances: (Approx.):	
Grid to Plate	6.5 $\mu\mu f$
Grid to Filament	6.0 $\mu\mu f$
Plate to Filament	1.4 $\mu\mu f$

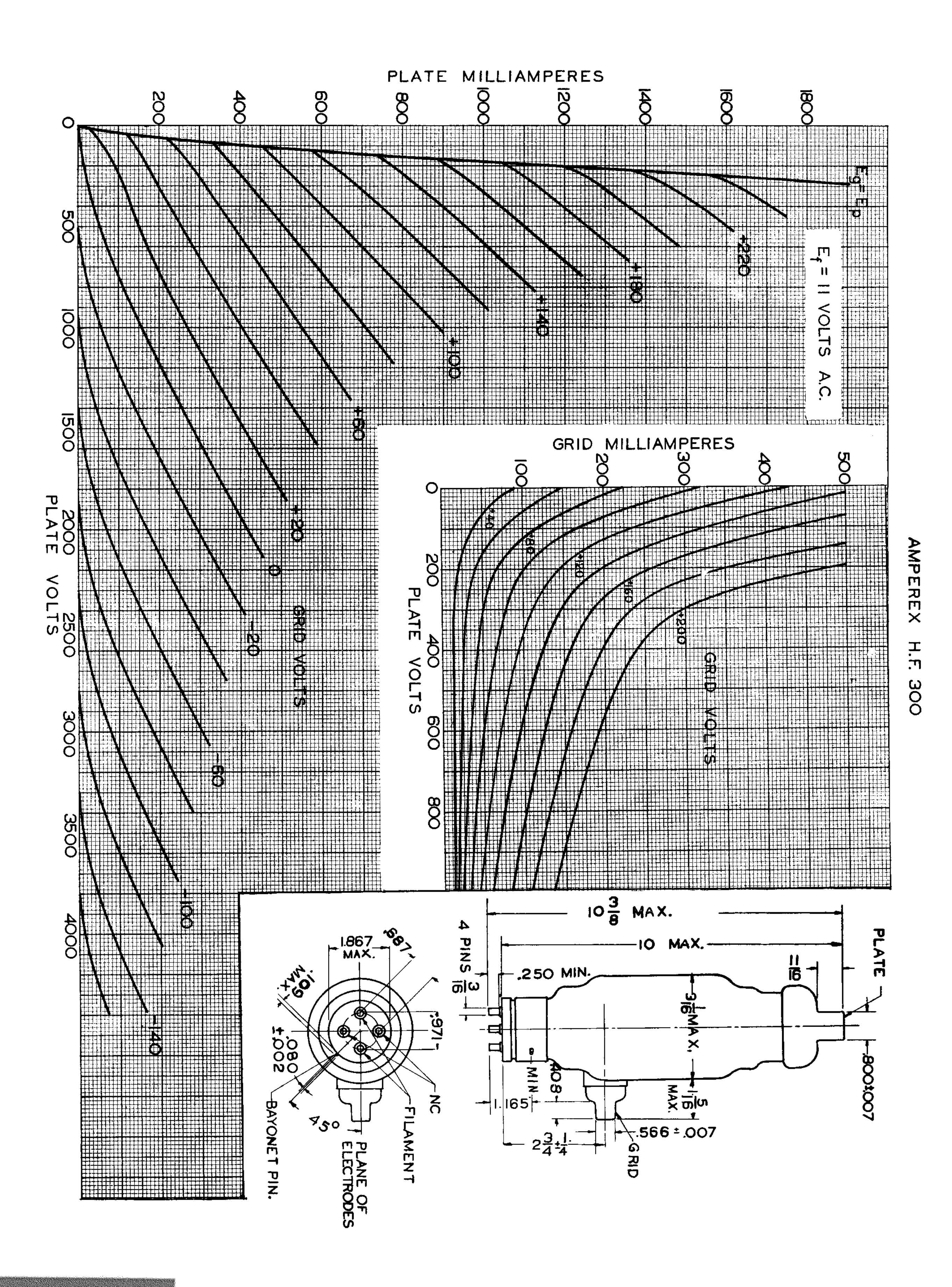
Plate Modulated R.F. Power Amplifier Class C—Telephony

(Continued)

	Maximum Rating per Tube	Typical Operation One Tube	
D.C. Grid Voltage	—500	—200	—300
Fixed Grid Bias (volts)	..	—50	—84
Grid Resistor (ohms)	..	2500	6000
Peak R.F. Grid Voltage	..	400	490
D.C. Plate Current (ma.)	275	275	250
Plate Input (watts)	600	413	500
D.C. Grid Current (ma.)	60	60	36
R.F. Grid Current (amps)	10	..	..
Plate Dissipation (watts)	150	103	115
Driving Power (Approx.) (watts)	..	22	17
Plate Power Output (watts)	..	310	385
Frequency Limit for Above Operation (mc.)	20	40	30
F.C.C. Broadcast Rating (watts) (Nearest Classification for Final Stage Use)	250	..	..

R.F. Power Amplifier—Class C—Telegraphy

	Maximum Rating per Tube	Typical Operation One Tube		
A.C. Filament Voltage	..	11	11	11
D.C. Plate Voltage	3000	3000	2500	2000
D.C. Grid Voltage	—500	—400	—300	—200
Peak R.F. Grid Voltage	..	590	490	385
D.C. Plate Current (ma.)	275	250	260	275
Plate Input (watts)	750	750	650	550
D.C. Grid Current (Approx.) (ma.)	60	28	36	36
R.F. Grid Current (amps)	12	..	..	..
Plate Dissipation (watts)	200	150	130	140
Driving Power (Approx.) (watts)	..	16	17	13
Plate Power Output (watts)	..	600	520	410
Frequency Limit for Above Operation (mc.)	20	20	30	40


PLATE MILLIAMPERES
PLATE VOLTS
GRID VOLTS
Eg = Ep
Ef = 11 VOLTS A.C.
+220
+180
+140
+100
+60
+20
0
-20
-60
-100
-140
GRID MILLIAMPERES
AMPEREX H.F. 300
10 3/8 MAX.
10 MAX.
4 PINS 3/16
.250 MIN.
3 1/16 MAX.
1 5/16 MAX.
PLATE
11/16
.800±.007
.408 MIN
1.165
2 3/4 ± 1/4
.566 ± .007
GRID
1.867 MAX.
.687
.971
.109 MAX.
.080 ±.002
NC
FILAMENT
BAYONET PIN.
45°
PLANE OF ELECTRODES